

What is claimed is:

Sub A2  
1. A sensor for detecting a quantity of light, comprising:

a housing having an axis along a direction in which light enters the sensor when an azimuth is zero, the axis dividing a surface of the housing into a first region and a second region;

a first photodetector disposed on the second region of the housing;

a second photodetector disposed on the first region of the housing;

a central photodetector disposed on both the first region and the second region of the housing across the axis, and having a sensitivity lower than those of the first photodetector and the second photodetector; and

a shading member disposed above the housing and having a light transmittance part for transmitting light toward at least one of the central photodetector, the first photodetector, and the second photodetector, wherein;

the first photodetector and the central photodetector cooperatively detect a first quantity of light entering the sensor from a side of the first region with respect to the axis; and

the first photodetector and the central photodetector cooperatively detect a second quantity of light entering the sensor from a side of the second region with respect to the axis.

2. The sensor of claim 1, further comprising a signal

processing circuit for processing first, second, and third signals respectively outputted from the first photodetector, the second photodetector, and the central photodetector, wherein:

a gain of the third signal from the central photodetector is smaller than those of the first signal and the second signal so that the sensitivity of the central photodetector is lower than those of the first photodetector and the second photodetector.

3. The sensor of claim 1, wherein the central photodetector includes a first central photodetector and a second central photodetector, each of which is disposed on both the first region and the second region of the housing across the axis.

4. The sensor of claim 3, wherein:

the first photodetector, the second photodetector, and the first central photodetector form an annular shape which has a central point on the axis; and

the second central photodetector is disposed on the central point.

5. The sensor of claim 4, wherein the second central photodetector has a circular shape.

6. The sensor of claim 1, wherein the housing has a specific point on the axis, the specific point defining an approximately identical distance from the first

photodetector, the second photodetector, and the central photodetector.

7. The sensor of claim 1, wherein the central photodetector has a shape symmetrical with respect to the axis.

8. A sensor for detecting a quantity of light incident on a vehicle, comprising:

a housing having an axis along a front and rear direction of the vehicle in which light enters the sensor when an azimuth is zero, the axis dividing a surface of the housing into a first region and a second region;

a first photodetector disposed on the second region of the housing, for outputting a first signal corresponding to a quantity of light incident thereon;

a second photodetector disposed on the first region of the housing, for outputting a second signal corresponding to a quantity of light incident thereon;

a central photodetector disposed on both the first region and the second region of the housing across the axis, and having a sensitivity lower than those of the first photodetector and the second photodetector, for outputting a third signal corresponding to a quantity of light incident thereon;

a shading member disposed above the housing and having a light transmittance part for transmitting light toward at least one of the central photodetector, the first photodetector, and the second photodetector; and

a signal processing circuit provided on the housing

for determining a first quantity of light entering the sensor from a side of the first region based on the first signal and the third signal, and for determining a second quantity of light entering the sensor from a side of the second region based on the second signal and the third signal.

<sup>10</sup> 9. The sensor of claim <sup>9</sup> 8, wherein the signal processing circuit is provided at a front side of the vehicle with respect to the central photodetector.

<sup>11</sup> 10. The sensor of claim <sup>10</sup> 9, wherein:  
the first photodetector, the second photodetector, and the central photodetector form an annular shape having a notched portion at the front side of the vehicle; and  
the signal processing circuit is provided at the notched portion.

*Sub 24* 11. The sensor of claim 9, wherein the light transmittance part of the shading member is disposed above a portion of the housing, which is a rear side of the vehicle with respect to the signal processing circuit.

12. A sensor for detecting a quantity of light, comprising:

a housing having an axis along a direction in which light enters the sensor when an azimuth is zero, the axis dividing a surface of the housing into a first region and a second region;

a first photodetector for detecting a first quantity of light entering the sensor from a side of the first region, the first photodetector having a first main portion entirely disposed on the second region and a plurality of first protrusions protruding from the first main portion toward the first region across the axis; and

a second photodetector for detecting a second quantity of light entering the sensor from a side of the second region, the second photodetector having a second main portion entirely disposed on the first region and having a plurality of second protrusions protruding from the second main portion toward the second region across the axis, wherein:

the plurality of first protrusions extend on the first region with a first width from the axis together with the plurality of second protrusions; and

the plurality of second protrusions extend on the second region with a second width from the axis together with the plurality of first protrusions.

<sup>16</sup> 13. The sensor of claim <sup>15</sup> 12, wherein the first width is approximately equal to the second width.

*Sub 15* 14. The sensor of claim 12, wherein the plurality of first protrusions and the plurality of second protrusions are alternately disposed one another.

<sup>18</sup> 15. The sensor of claim <sup>15</sup> 12, wherein:  
the plurality of first protrusions form a zigzag side

of the first photodetector; and

the plurality of second protrusions form a zigzag side of the second photodetector facing the zigzag side of the first photodetector.

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